

REMARKS

Claims 1-12 are all the claims pending in the application. Claims 1-6, 11 and 12 are again rejected. Claims 7-10 are again objected to but would be allowable if placed into independent form. Applicants appreciate the Examiner's indication of allowability but believe strongly that all of the present claims define over the cited art, as subsequently presented.

Claim Rejection - 35 U.S.C. § 103

Claims 1-6, 11 and 12 are rejected under 35 U.S.C. § 102(e) as being unpatentable over Berwanger (WO-03/021 126 or US - Patent n° 6,752,248) in view of the newly cited patent to Battig (6,155,720). This rejection is traversed for at least the following reasons.

Berwanger's Deficiencies Are Significant

Applicants originally recognized those deficiencies. Applicants again wish to note that the differences between Berwanger and the present invention were expressly identified in the specification at page 4 lines 3-10. Moreover, the claims were drafted originally in a manner that had Berwanger in mind and expressly distinguished over Berwanger. In particular, claim 1 and all of the claims dependent therefrom are distinguishable because they are defined by

the centering bearing has structural characteristics that vary circumferentially in a distribution configuration suitable for generating different bearing stiffnesses along two orthogonal axes contained in a plane that is perpendicular to the axis of the axle.

Applicants have subsequently emphasized those deficiencies. In the previous Amendment, Applicant emphasized that Berwanger discloses a brake system including a torque tube which exhibits asymmetric stiffness in order that its vibration modes be weaker and not concentric with the axle axis or the brake disks. In achieving that result, Berwanger uses a torque tube that is axially asymmetrical. More particularly, the torque tube includes an annular support flange including a plurality of holes, wherein certain ones of which are non-circular thereby imparting asymmetry to the support flange and to the torque tube. As indicated in column 2, at the end the third paragraph, the torque tube is axially asymmetric due to the non-uniformly distributed hole pattern of openings (holes), as clearly illustrated on Figure 2.

The Examiner expressly recognizes these deficiencies. Notably, as a result of Applicant's argument, the Examiner admits in the present Office Action that Berwanger does not teach that the centering bearing has structural characteristics that vary circumferentially in a

distribution configuration suitable for generating different bearing stiffness along two orthogonal axes contained in a plane that is perpendicular to the axis of the axle.

For all the foregoing reasons, based upon the Applicants' own submissions and the Examiner's admissions, one skilled in the art would recognize that the claimed invention expressly and clearly defines patentable subject matter over Berwanger, particularly with respect to the limitations appearing after the "wherein" clause of the claim.

Battig Does Not Remedy the Deficiencies of Berwanger

The Examiner looks to Battig, particularly Fig. 6, for a teaching of a centering bearing (13) which is alleged to have structural characteristics that vary circumferentially in a manner as claimed. However, Applicants respectfully submit that the Examiner's understanding of the characteristics is not correct, since the centering element illustrated at Figure 6 has substantially the same radial stiffness along a vertical axis of the drawing and along a horizontal axis of the drawing.

Along the vertical axis, the stiffness is created by a metallic web 41 and a squeeze fluid film (from the shaft axis towards the bearing housing). Along the horizontal axis, the stiffness is created by a squeeze fluid film and a metallic web 42 (from the shaft axis towards the bearing housing). Clearly, the two stiffnesses along these two axes are basically identical. The journal bearing shows the same stiffness when subjected to forces that tend to excentrate the shaft axis horizontally (in the plane of drawing) and to forces that tend to excentrate the shaft axis vertically (in the plane of the drawing).

In Battig, it is important to have the same stiffnesses along a horizontal axis and a vertical axis, since Battig teaches a means to manage a fluid film which has to be homogeneous along the periphery (even if it consists of partial segments of fluid film), while also maintaining a homogeneous centering. In other words, the goal in Battig is to maintain the fluid layer all around the shaft axis while centering the shaft axis in all directions. This feature is exactly opposite to that of the claimed invention, wherein different stiffnesses along two orthogonal axes are selectively determined.

In sum, Battig may be distinguished from the features of the invention defined by claim 1 because it does not teach a structure in Fig. 6 that has different bearing stiffness along two orthogonal axes in a plane perpendicular to the axis of the axle.

Battig Would Not be Used in Berwanger

The Examiner also asserts that it would have been obvious to one skilled in the art to use the bearing of Battig in the brake system of Berwanger in order to provide vibration damping. First, Applicants respectfully submit that there is no teaching or suggestion to combine the two references, and there may also be an incompatibility between the structure of Berwanger and the central bearing of Battig that would make them incompatible, or at least, mitigate against their combination.

However, the inventors have developed, for the first time, a brake system that includes a bearing means which can be rigid in a first direction and flexible in a second direction orthogonal to said first direction.

In short, one skilled in the art would have had no incentive or motivation to combine the teachings of Berwanger and Battig since the purposes of the two devices are quite different.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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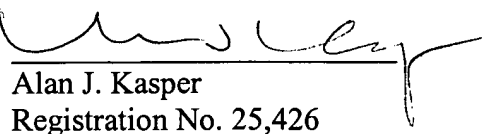
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Date: October 13, 2005